KODAK PROFESSIONAL PORTRA ENDURA Paper and KODAK PROFESSIONAL SUPRA ENDURA Paper

Simplified Lab Production. Superior Print Quality.

KODAK PROFESSIONAL PORTRA ENDURA Paper and KODAK PROFESSIONAL SUPRA ENDURA Paper are fast, resin-coated multilayer papers for making color prints from color negatives or internegatives. They can be exposed both digitally and optically. They are designed for all types of equipment from digital (CRT, LED, and laser) exposing devices to optical enlargers and automatic printers.

KODAK PROFESSIONAL PORTRA ENDURA Paper is a low contrast paper, making it an ideal choice for portrait, studio, and wedding photography, as well as location portraiture. KODAK PROFESSIONAL SUPRA ENDURA Paper features slightly higher contrast and color saturation, making it an excellent choice for portrait, candid, event, high-key, and commercial applications.

The new papers can easily be distinguished from KODAK PROFESSIONAL PORTRA III and SUPRA III Papers by their unique watermark on the back. PORTRA ENDURA Paper has a single grey dot under PAPER, whereas PORTRA III has two dots separating PAPER, PAPIER, and PAPEL. Likewise, SUPRA ENDURA Paper has a single grey dot under PAPER, whereas SUPRA III has two dots separating PAPER, PAPIER, and PAPEL.

Both are available in sheets and rolls in E (fine lustre), F (glossy), and N (matt) surfaces. Use KODAK EKTACOLOR Chemicals for Process RA-4 to process these papers.

FEATURES	BENEFITS
• New emulsion technology for digital and optical performance	• Same imaging dyes in digital and optical printers yields consistent image quality and appearance throughout the lab • Excellent latent image keeping from 5 seconds to 24 hours means improved consistency, especially in digital devices • Excellent print quality in both high quality and high productivity modes of bi-directional printers
• Patent-pending dual layer coupler blending technology for excellent image quality	• Excellent flesh reproduction • Softer, smoother flesh reproduction from highlights to shadows • Excellent color accuracy • Improved color saturation • Brighter blues, cyan, purples and reds
• State-of-the-art image stability	• Improved light stability—Over 100 years before noticeable fading in typical home display • Significantly improved dark stability—Over 200 years before noticeable fading in the most common home storage conditions • Superior performance in professional applications creating new standards for image permanence
• Patented high intensity reciprocity characteristics	• Exposure range of 32 stops—from 50 nanoseconds to 10 minutes • Can be used for all exposing devices, from optical enlargers and automatic printers to digital (CRT, LED, and Laser) exposing devices • Broad print engine applicability for CRT, LED, and laser devices • Optimized text and fringing characteristics in all digital devices • Simplified inventory (easy ordering, stocking, handling) • One paper for all offers flexibility in the lab
• More robust processing capability	• Less sensitive to process chemical activity variations • Reduced sensitivity to process fluctuations caused by: – Image density content (low key/highkey) – Inadvertent low level of bleach-fix contamination – Utilization changes – Product mix • More complete paper development for improved consistency
• Reduced developer replenishment rates	• Lower process RA-4 processing costs • Lower environmental impact
• 50% less calcium	• Significantly reduced propensity for calcium buildup • Reduced maintenance and cleaner running paper processors
• Improved raw stock color—patented technology	• Lighter, more neutral raw stock color for easier dodging and burning • Easier printer setup and focus
• Reduced sensitometric variability	• Reduced speed variability means more consistent quality within an emulsion blend

STORAGE AND HANDLING

Store unprocessed paper at 13°C (55°F) or lower in the original sealed package. High temperatures or high humidity may produce unwanted print quality changes.

To avoid moisture condensation on unexposed paper that has been refrigerated, allow the paper to warm up to room temperature before opening the package. For best results, remove the paper from cold storage the day before you use it, or allow the paper to warm up for the appropriate time from the following table:

Warm-Up Times (Hours) to Reach Room Temperature of 21°C (70°F)			
Size	**From a Storage Temperature of**		
	-18°C (0°F)	**2°C (35°F)**	**13°C (55°F)**
8 x 10-inch (100-sheet box)	4 hours	3 hours	2 hours
16 x 20-inch (50-sheet box)	3 hours	2 hours	2 hours
20 x 24-inch (50-sheet box)	3 hours	2 hours	2 hours
3 1/2-inch x 775-foot roll	8 hours	6 hours	4 hours
8-inch x 575-foot roll	10 hours	7 hours	4 hours
20-inch x 50-foot roll	6 hours	5 hours	3 hours
30-inch x 100-foot roll	8 hours	6 hours	4 hours
40-inch x 100-foot roll	9 hours	7 hours	5 hours

Handle the paper carefully by the edges. The paper is packaged with the emulsion side of all sheets facing in the same direction. For complete light and moisture protection, use the inner bag *and* the two-part cardboard box to store the paper.

DARKROOM RECOMMENDATIONS

Handle unprocessed paper in total darkness. Be sure that your darkroom is lighttight. Eliminate stray light from enlarger heads, timers, LEDs, etc.

Note: Using a safelight *will* affect your results. If *absolutely necessary*, you can use a safelight equipped with a KODAK 13 Safelight Filter (amber) with a 7 1/2-watt bulb. Keep the safelight at least 1.2 metres (4 feet) from the paper. Keep safelight exposure as short as possible. Run tests to determine that safelight use gives acceptable results for your application.

EXPOSURE

Digital Printing

You can expose KODAK PROFESSIONAL PORTRA ENDURA Paper and KODAK PROFESSIONAL SUPRA ENDURA Paper with many types of digital printers. They perform well with the following Kodak digital printers:

- KODAK PROFESSIONAL LED Color Printer
- KODAK PROFESSIONAL LED II Printer 20P/20R
- KODAK PROFESSIONAL Digital Multiprinter
- KODAK PROFESSIONAL Digital Multiprinter II
- KODAK PROFESSIONAL LF CRT Color Printer
- KODAK PROFESSIONAL RP 30 Laser Printer
- KODAK PROFESSIONAL RR 30 Laser Printer
- KODAK PROFESSIONAL SRP 30 Laser Printer
- KODAK PROFESSIONAL RP 50 LED Printer

For up-to-date starting values for Kodak digital printers and other manufacturers' equipment, refer to the following documents (available at www.kodak.com/go/endura):

- Digital Printer Aims for KODAK PROFESSIONAL PORTRA ENDURA Paper, CIS-234
- Digital Printer Aims for KODAK PROFESSIONAL SUPRA ENDURA Paper, CIS-235

Optical Printing

Expose KODAK PROFESSIONAL PORTRA ENDURA Paper and KODAK PROFESSIONAL SUPRA ENDURA Paper in automatic printers or enlargers equipped with tungsten or tungsten-halogen light sources or photo enlarger lamps. Set up and balance the printer or enlarger according to the manufacturer's instructions.

Do not use fluorescent lamps to expose this paper. Use a heat-absorbing glass to remove infrared radiation. Because voltage changes affect light output and color quality, use a voltage regulator.

Keep negatives and the equipment optical system clean. Mask negatives to eliminate stray light. You can use the white-light or tricolor exposure method.

Printer Setup

Initial conversion to these papers involves the rebalance of your printers. Since the green speed is about ½ stop faster than PORTRA III and SUPRA III Papers, increase your magenta filtration by approximately 15CC. Also, update your printers by running your normal and slope printer control negatives to adjust printer slope. (See "Printer Control Tools.") This will optimize the print quality due to the improved reciprocity of these papers.

White-Light Exposure Method

Control color balance with dichroic filters built into the printer or enlarger, or with KODAK Color Printing (CP) Filters (Acetate) placed between the lamp and the negative. You can use any number of filters between the light source and the negative. If you use cyan filtration, use filters with the suffix "-2," (e.g. "CP10C-2").

1. Start with a filter pack of 65M + 55Y to make a test print.
2. Evaluate the test print under the appropriate lighting. (See "Illumination for Evaluation of Prints.")
3. Judge print density first. If necessary, make another print by adjusting the exposure as recommended in the following table.

If your print is	Do this	OR	Do this
TOO LIGHT	Open the lens aperture to increase the light level		Increase the exposure time
TOO DARK	Close the lens aperture to decrease the light level		Decrease the exposure time

4. Then judge the color balance.

If your print is	Subtract these filters	OR	Add these filters
CYAN	Magenta + Yellow (Red)		Cyan
MAGENTA	Cyan + Yellow (Green)		Magenta
YELLOW	Magenta + Cyan (Blue)		Yellow
RED	Cyan		Magenta + Yellow
GREEN	Magenta		Cyan + Yellow
BLUE	Yellow		Cyan + Magenta

5. Remove neutral density from your filter pack. For example, if you determine that a filter pack of 40R + 10Y + 10C will give you a pleasing print:
   a. Convert any primary filters (R, G, B) to their subtractive equivalents (C, M, Y): 40R = 40M + 40Y.
   b. Add filters of the same color: 10Y + 40Y = 50Y.
   c. If the new filter pack has all three subtractive colors, cancel the neutral density by subtracting the smallest density value from all three densities:

10C	40M	50Y		
-10	-10	-10		
	30M	40Y	=	filtration without neutral density

6. Adjust the exposure for the new filter pack. An exposure time that produced a print of satisfactory density may not produce an acceptable density when you change the filter pack. The following table gives filter factors for calculating exposure adjustments when you use KODAK Color Printing (CP) Filters.

Filter Factors for CP Filters			
Filter	**Factor**	**Filter**	**Factor**
05Y	1.1	05R	1.2
10Y	1.1	10R	1.3
20Y	1.1	20R	1.5
30Y	1.1	30R	1.7
40Y	1.1	40R	1.9
50Y	1.1	50R	2.2
05M	1.2	05G	1.1
10M	1.3	10G	1.2
20M	1.5	20G	1.3
30M	1.7	30G	1.4
40M	1.9	40G	1.5
50M	2.1	50G	1.7
05C	1.1	05B	1.1
10C	1.2	10B	1.3
20C	1.3	20B	1.6
30C	1.4	30B	2.0
40C	1.5	40B	2.4
50C	1.6	50B	2.9

To use the factors, *divide* the old exposure time by the factor for any filter you *remove*. If you add a filter, *multiply* the time by the factor. If you add or remove two or more filters, multiply the individual factors and use the result as your factor. You may need to modify these factors for your equipment.

Note: The filter factors listed in the table take into account the effects of filter surfaces.

When you adjust the filtration in equipment that has built-in dichroic filters, any noticeable differences in density are due to differences in the color density of the print. For example, you have a print with acceptable density, but a magenta balance. When you add magenta filtration to correct the color balance, the print will become too light, so you must use a longer exposure time.

A rule of thumb for magenta dichroic filtration is to change the exposure time by one percent for every unit of change in filtration. For example, if you increase the magenta filtration by 20M, increase the exposure time by 20 percent. Changes in yellow dichroic filtration do not usually affect the apparent print density. If you use cyan dichroic filtration, use the filter factors in the table above as starting points for adjusting exposure.

Tricolor Exposure Method

Use KODAK WRATTEN Gelatin Filters No. 25 (red), No. 99 (green), and No. 47B (blue) to give the paper three separate exposures. Do not move the paper or the enlarger until you have made all three exposures. Typical exposure times for making an enlargement from a normally exposed negative are given in the table below.

Filter	Times for an Aperture Setting of *f*/8* (8x Enlargement of a KODAK PROFESSIONAL PORTRA Film Negative)
Red	2.2 seconds
Green	2.3 seconds
Blue	3.5 seconds

* For an enlarger equipped with a Photo Enlarger Lamp No. 212 or No. 302; the setting may vary with other types of lamps.

Evaluate the test print under the appropriate lighting. (See “Illumination for Evaluation of Prints.”)

Judge the print density first. If necessary, make another print by adjusting the exposure as recommended in the table below.

If your print is	Do this	OR	Do this
TOO LIGHT	Open the lens aperture to increase the light level		Increase all exposure times proportionally
TOO DARK	Close the lens aperture to decrease the light level		Decrease all exposure times proportionally

Then judge color balance.

If your print is	Subtract these filters	OR	Add these filters
CYAN	Red		Blue + Green
MAGENTA	Green		Red + Blue
YELLOW	Blue		Red + Green
RED	Blue + Green		Red
GREEN	Red + Blue		Green
BLUE	Red + Green		Blue

LATENT-IMAGE KEEPING

These papers feature improvements in the stability of the latent image. Under normal conditions, you should not notice shifts in the latent image with keeping times from 5 seconds to 24 hours. Therefore, you do not need to change your printing procedures to compensate for latent-image shifts under normal temperature and handling conditions.

PROCESSING

Use KODAK EKTACOLOR RA Chemicals for Process RA-4, and use KODAK PROFESSIONAL Pro Strips Color Negative Paper Control Strips / for Process RA-4. (See "Process Control.")

When fully converted to these new papers, your developer replenishment rate should be approximately 10% lower than with KODAK PROFESSIONAL PORTRA III and SUPRA III Papers. Review your process control charts and make adjustments as needed to stay in control.

Bleach-fix replenishment rates will stay the same for Process RA-4. When using KODAK EKTACOLOR PRIME Bleach-Fix Replenisher, replenishment rates will need to increase.

For detailed information on replenishment rates and processing this paper in continuous or roller-transport processors, see KODAK Publication No. Z-130, *Using KODAK EKTACOLOR RA Chemicals.* For information on processing this paper in trays or rotary-tube and drum processors, see KODAK Publication No. J-39, *Tray, Drum, and Rotary-Tube Processing with KODAK EKTACOLOR RA Chemicals*. Both publications are available through our website at **www.kodak.com/go/photochemicals**.

Do not use drying temperatures above 93°C (200°F) to avoid damage to prints.

Underdrying can produce tackiness that tends to make paper stick when it is wound into rolls before cutting. *Overdrying* can cause curl and complicate transport in print finishing.

Do not ferrotype this paper—its surface dries to a natural gloss without ferrotyping.

ILLUMINATION FOR EVALUATION OF PRINTS

Evaluation of prints for color and density requires higher illumination levels than those used in normal display conditions. A good average conditionfor evaluation is a light source with a color temperature of 5000 K ± 1000, a Color Rendering Index of 85 to 100, and an illuminance of at least 50 footcandles (538 lux). Fluorescent lamps such as cool white deluxe (made by several manufacturers) meet these conditions.

You can also use a mixture of incandescent and fluorescent lamps. For each pair of 40-watt cool white deluxe fluorescent lamps, use a 75-watt frosted, tungsten bulb.

Viewing conditions should meet ANSI Standard PH2.30-1989.

RETOUCHING

If possible, do any required retouching on color negatives before you make prints—especially if you plan to make more than one print from each negative. For information on retouching negatives, see KODAK Publication No. E-71, *Retouching Color Negatives*.

If the negative image is small, you can make corrections much more easily by applying dry or liquid dyes to small or large areas of the enlarged print. Although you'll probably do most retouching with dyes, you may sometimes want to use black lead, colored pencils, or opaque. Because color prints have separate dye layers, you can't use an etching knife to reduce density as you can with black-and-white materials. For information on retouching prints, see KODAK Publication No. E-70, *Retouching Prints on KODAK EKTACOLOR and EKTACHROME Papers*.

POST-PROCESS TREATMENTS

Mounting Prints

You can mount prints with dry mounting tissue. The temperature across the heating platen should be 82 to 93°C (180 to 200°F). Preheat the cover sheet that you use over the face of the print to remove moisture. Apply pressure for 30 seconds, or up to 3 minutes in the case of a thick mount.

Caution

Temperatures above 93°C (200°F) for long periods of time may cause physical and color changes in prints. Excessive moisture may also cause color shifts. Mounting at the lowest temperature at the shortest time will reduce these changes.

Note: KODAK PROESSIONAL PORTRA ENDURA Paper and KODAK PROESSIONAL SUPRA ENDURA Paper may shift towards a pink balance when heated to excessive temperatures, but will return to normal when fully cooled to room temperature.

You can also use a contact-type adhesive or cement for cold-mounting.

For information on lacquering and other post-process treatments, see KODAK Publication No. E-176, *Post-Processing Treatment of Color Prints—Effects on Image Stability*, available through our website at **www.kodak.com/go/professional**.

STORAGE AND DISPLAY OF PRINTS

KODAK PROFESSIONAL PORTRA ENDURA Paper and KODAK PROFESSIONAL SUPRA ENDURA Paper have been formulated to provide improved dye stability and print longevity for prints displayed under typical home lighting conditions (i.e., 120 lux for 12 hours a day), and typical home dark storage conditions (i.e., 20 to 23°C [68 to 73.4°F] and 50% relative humidity).

Photographic dyes, like all dyes, can change with time and exposure to sunlight, ultraviolet radiation, excessive heat, and high humidity. To help prevent changes in photographic dyes, follow these guidelines:

- Illuminate prints with tungsten light whenever possible.
- Display prints in the lowest light level consistent with your viewing needs.
- If a print is exposed to direct or indirect sunlight or fluorescent light, use an ultraviolet-absorbing filter (such as glass) between the light source and the print.
- If prints are displayed behind glass, maintain a slight separation between the print and the glass.
- Keep the temperature and humidity as low as possible.
- Use album materials described in KODAK Publication No. E-30, *Storage and Care of KODAK Photographic Materials—Before and After Processing*.

PROCESS CONTROL

To produce high-quality color prints consistently and with a minimum of waste, you need to match your process to a standard for density, color, and contrast each time you process paper. In addition to monitoring process parameters such as solution times, temperature, replenishment rates, solution concentrations, etc., you should regularly run control strips to ensure best results.

KODAK PROFESSIONAL Pro Strips Color Negative Paper Control Strips / for Process RA-4 (CAT 129 8587) are designed specifically for use with KODAK PROFESSIONAL Papers and KODAK PROFESSIONAL Print and Display Materials in professional labs. These control strips are designed to detect process conditions that can degrade the quality of your finished prints. They are better able to track the papers that are processed in professional finishing laboratories.

For more information, see KODAK Publication No. Z-130, *Using KODAK EKTACOLOR RA Chemicals*, section 7a.

SCANNER TOOLS

The KODAK Q-60 Color Input Targets are available on KODAK EKTACHROME Professional Film in both 35 mm and 4 x 5 inch formats and on KODAK EKTACOLOR Paper. Developed primarily for use by prepress houses in the printing industry, this target can also be used by professional photographers, desktop publishers, and in the emerging hybrid imaging area.

The target is designed for use in the commercial and desktop arenas as a comparative control tool to help customers calibrate their input product to the final output. This target maps the gamut of color space that KODAK EKTACHROME Film and EKTACOLOR Paper can reproduce.

When used properly, customers will be able to compare their output—whether it is separations for the printed page and four-color printing or second generation originals from a film recorder—to the original. This will help customers optimize the capabilities of their system for color reproduction of an extreme range of color gamut

Scanner color characterization targets produced in accordance with ANSI IT8.7/1 (transmission) and IT8.7/2 (reflection) Standards (or ISO 12641) are available from Kodak.

The KODAK PROFESSIONAL Q-60 Color Input Target/Q-60R2 is manufactured on KODAK PROFESSIONAL ENDURA Paper, and is likewise identified by a watermark with a single grey dot under PAPER. This target can be used with both the newer ENDURA Papers and older papers. The older Q-60R1 target, which has the same two-dot watermark as the older papers, can be used with the newer papers.

PRINTER CONTROL TOOLS

The following tools are manufactured by Kodak for optimization of printer balance and slope controls of KODAK PROFESSIONAL PORTRA Films printed on KODAK PROFESSIONAL Paper.

Product	Features / Description	CAT No.
KODAK PROFESSIONAL PORTRA Printer Control Negative Set / Size 135	This set includes one each: very under, under, normal, over, and very over negatives on a single strip of 35 mm film	179 8511
KODAK PROFESSIONAL PORTRA Printer Control Negative Normal / Size 120	Size 120 Film	846 0958
KODAK PROFESSIONAL PORTRA Printer Control Negative Very Under / Size 120	Size 120 Film	107 1398
KODAK PROFESSIONAL PORTRA Printer Control Negative Under / Size 120	Size 120 Film	841 1902
KODAK PROFESSIONAL PORTRA Printer Control Negative Over / Size 120	Size 120 Film	177 1302
KODAK PROFESSIONAL PORTRA Printer Control Negative Very Over / Size 120	Size 120 Film	144 5741

The following tools are manufactured by Kodak for optimization of printer balance and slope controls of KODAK PROFESSIONAL PORTRA 400BW Film printed on KODAK PROFESSIONAL Paper.

Product	Features / Description	CAT No.
KODAK PROFESSIONAL PORTRA 400BW Printer Control Negative Set / Size 135	This set includes one each: very under, under, normal, over, and very over negatives on a single strip of 35 mm film	156 8286
KODAK PROFESSIONAL PORTRA 400BW Printer Control Negative Set / Size 120 Five Negative Set	This set includes one each: very under, under, normal, over, and very over negatives on a single strip of size 120 film	114 4419

The following tool is manufactured by Kodak for optimization of printer balance and slope controls of KODAK PROFESSIONAL T400 CN Film printed on KODAK PROFESSIONAL Paper.

Product	Features / Description	CAT No.
KODAK T-MAX T400 CN Printer Balancing Kit / Size 135, Size 120	This set includes size 135 and size 120 negatives for printer balance and slope control	865 3552

SIZES AVAILABLE

KODAK PROFESSIONAL PORTRA ENDURA Paper and KODAK PROFESSIONAL SUPRA ENDURA Paper are available in a variety of roll and sheet sizes.

Sizes and catalog numbers may differ from country to country. See your dealer who supplies KODAK PROFESSIONAL Products.

Other roll and sheet sizes, including KODAK PROFESSIONAL PORTRA ENDURA Paper in a Y surface, are available on a special-order basis; contact your KODAK PROFESSIONAL Sales Representative.

KODAK PROFESSIONAL PORTRA ENDURA Paper

Sheets

Size in. x in.	Size cm x cm	Surface	Sheets Per Package	CAT No.
8 x 10	20.3 x 25.4	E	100	862 1922
8 x 10	20.3 x 25.4	F	100	852 7111
8 x 10	20.3 x 25.4	N	100	104 4064
8½ x 11	21.6 x 27.9	F	50	813 9826
8½ x 11	21.6 x 27.9	N	50	142 1932
10 x 10	25.4 x 25.4	N	50	847 7135
10 x 13	25.4 x 33	E	50	152 4693
11 x 14	27.9 x 35.6	E	50	802 8821
11 x 14	27.9 x 35.6	F	50	875 9789
11 x 14	27.9 x 35.6	N	50	839 9800
16 x 20	40.6 x 50.8	E	50	137 1434
16 x 20	40.6 x 50.8	F	50	111 9684
16 x 20	40.6 x 50.8	N	50	125 6494
20 x 24	50.8 x 61	E	50	107 0994
20 x 24	50.8 x 61	N	50	849 2498
24 x 30	61 x 76.2	E	50	145 2101
24 x 30	61 x 76.2	N	50	802 7559
30 x 40	76.2 x 101.6	E	25	145 3067
30 x 40	76.2 x 101.6	N	50	833 3312

Grand Packs

Size in. x in.	Size cm x cm	Surface	Sheets Per Package	CAT No.
8 x 10	20.3 x 25.4	E	1000	193 3027

Rolls

Rolls in. x ft.	Rolls cm x m	Surface	Spec No.	CAT No.
2.7 x 577	7 x 176	N	224	154 9450
3½ x 577	8.9 x 176	E	224	120 9642
3½ x 577	8.9 x 176	N	224	154 9070
4 x 577	10.2 x 176	E	224	894 2807
4 x 577	10.2 x 176	F	224	899 1093
4 x 577	10.2 x 176	N	224	878 8432
5 x 288	12.7 x 88	E	224	814 2135
5 x 577	12.7 x 176	E	224	162 8502
5 x 577	12.7 x 176	F	224	857 2182
5 x 577	12.7 x 176	N	224	847 0361
6 x 577	15.2 x 176	E	224	874 6653
8 x 288	20.3 x 88	E	224	876 0241
8 x 288	20.3 x 88	F	224	871 7746
8 x 288	20.3 x 88	N	224	183 4837
8 x 577	20.3 x 176	E	224	109 8854
8 x 577	20.3 x 176	F	224	830 8546
8 x 577	20.3 x 176	N	224	809 9863
10 x 288	25.4 x 88	E	224	871 2655
10 x 288	25.4 x 88	F	224	841 2314
10 x 288	25.4 x 88	N	224	131 2081
10 x 577	25.4 x 176	E	224	846 4885
10 x 577	25.4 x 176	N	224	162 9997
11 x 288	27.9 x 88	E	224	811 2948
11 x 288	27.9 x 88	F	224	896 0361
11 x 288	27.9 x 88	N	224	164 1604
11 x 577	27.9 x 176	E	224	174 8060
11 x 577	27.9 x 176	F	224	863 3893
12 x 288	30.5 x 88	F	224	197 7065
16 x 288	40.6 x 88	E	224	196 7991
16 x 288	40.6 x 88	N	224	145 1806
20 x 288	50.8 x 88	E	224	849 7117
20 x 288	50.8 x 88	F	224	144 4934
20 x 288	50.8 x 88	N	224	892 4300
30 x 164	76.2 x 50	F	223	110 7820
30 x 164	76.2 x 50	N	223	169 1021
32 x 164	81.3 x 50	E	223	858 2330
40 x 164	101.6 x 50	F	223	895 3051
40 x 164	101.6 x 50	N	223	154 8957
42 x 164	106.7 x 50	F	223	183 1544

Bulk Packs

Size in. x ft.	Size cm x m	Surface	Spec No.	CAT No.
3½ x 577	8.9 x 176	E	224	187 0385
5 x 577	12.7 x 176	E	224	137 2101
10 x 288	25.4 x 88	E	224	189 6323
10 x 577	25.4 x 176	E	224	820 9298
10 x 577	25.4 x 176	F	224	124 3013
11 x 288	27.9 x 88	E	224	846 4513
11 x 577	27.9 x 176	E	224	118 1312

KODAK PROFESSIONAL SUPRA ENDURA Paper

Sheets

Size in. x in.	Size cm x cm	Surface	Sheets Per Package	CAT No.
5 x 7	12.7 x 17.8	F	100	826 8443
5 x 7	12.7 x 17.8	N	100	893 4408
8 x 10	20.3 x 25.4	F	50	123 1281
8 x 10	20.3 x 25.4	E	100	882 3908
8 x 10	20.3 x 25.4	F	100	883 2297
8 x 10	20.3 x 25.4	N	100	800 0143
8½ x 11	21.6 x 27.9	F	50	169 3928
8½ x 11	21.6 x 27.9	N	50	810 4697
10 x 10	25.4 x 25.4	N	50	806 6532
10 x 12	25.4 x 30.5	F	50	113 8460
11 x 14	27.9 x 35.6	E	50	142 9208
11 x 14	27.9 x 35.6	F	50	166 0323
11 x 14	27.9 x 35.6	N	50	158 7385
16 x 20	40.6 x 50.8	E	50	179 9253
16 x 20	40.6 x 50.8	F	50	157 9002
16 x 20	40.6 x 50.8	N	50	864 1748
20 x 24	50.8 x 61	E	50	190 8375
20 x 24	50.8 x 61	F	50	879 1238
20 x 24	50.8 x 61	N	50	109 7856
24 x 30	61 x 76.2	E	50	818 7627
30 x 40	76.2 x 101.6	F	10	195 5053
30 x 40	76.2 x 101.6	N	10	130 9285
30 x 40	76.2 x 101.6	N	50	138 2795

Grand Packs

Size in. x in.	Size cm x cm	Surface	Sheets Per Package	CAT No.
8 x 10	20.3 x 25.4	F	1000	864 5095
8 x 10	20.3 x 25.4	N	1000	863 1913

Rolls

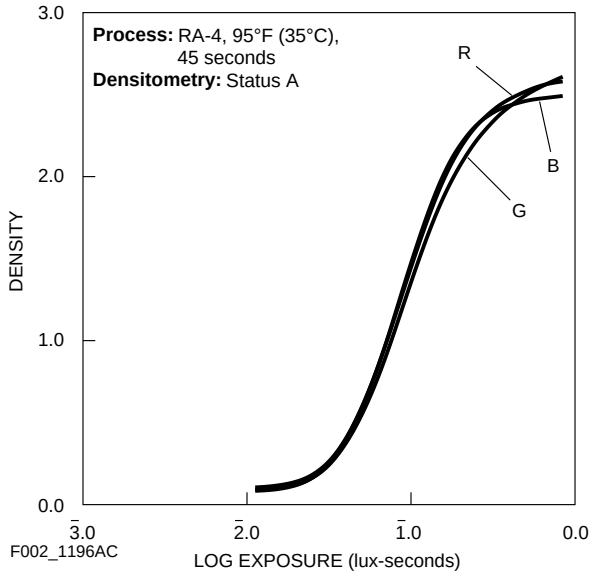
Rolls in. x ft.	Rolls cm x m	Surface	Spec No.	CAT No.
2.7 x 577	7 x 176	N	224	816 4188
3½ x 577	8.9 x 176	E	224	874 0193
3½ x 577	8.9 x 176	F	224	860 3771
3½ x 577	8.9 x 176	N	224	178 6102
4 x 577	10.2 x 176	E	224	163 5507
4 x 577	10.2 x 176	F	224	831 4171
4 x 577	10.2 x 176	N	224	168 4208
4 x 1000	10.2 x 305	N	224	897 8967
5 x 288	12.7 x 88	F	224	893 9639
5 x 288	12.7 x 88	N	224	154 6258
5 x 577	12.7 x 176	E	224	189 0599
5 x 577	12.7 x 176	F	224	195 5558
5 x 577	12.7 x 176	N	224	185 4959
6 x 577	15.2 x 176	F	224	190 6593
6 x 577	15.2 x 176	N	224	109 6247
7 x 577	17.8 x 176	E	224	832 7264
8 x 288	20.3 x 88	E	224	837 2617
8 x 288	20.3 x 88	F	224	804 7979
8 x 288	20.3 x 88	N	224	182 9720
8 x 577	20.3 x 176	E	224	833 6232
8 x 577	20.3 x 176	F	224	861 9736
8 x 577	20.3 x 176	N	224	137 2291
10 x 288	25.4 x 88	E	224	187 2225
10 x 288	25.4 x 88	F	224	803 4944
10 x 288	25.4 x 88	N	224	138 4403
10 x 577	25.4 x 176	E	224	167 5859
10 x 577	25.4 x 176	F	224	833 6430
10 x 577	25.4 x 176	N	224	149 9490
11 x 288	27.9 x 88	E	224	166 5256
11 x 288	27.9 x 88	F	224	869 8839
11 x 288	27.9 x 88	N	224	165 8251
11 x 577	27.9 x 176	E	224	154 5474
11 x 577	27.9 x176	F	224	183 8853
11 x 577	27.9 x 176	N	224	885 8326
12 x 288	30.5 x 88	E	224	829 6287
16 x 288	40.6 x 88	E	224	885 1644
16 x 288	40.6 x 88	N	224	194 9239
20 x 288	50.8 x 88	E	223	107 4053
20 x 288	50.8 x 88	E	224	177 6715
20 x 288	50.8 x 88	F	223	183 5198
20 x 288	50.8 x 88	N	223	139 4675
20 x 288	50.8 x 88	N	224	861 6708
30 x 164	76.2 x 50	E	223	121 6548
30 x 164	76.2 x 50	F	223	895 7458
30 x 164	76.2 x 50	N	223	107 2685
32 x 164	81.3 x 50	E	223	120 4890
32 x 164	81.3 x 50	F	223	801 4979
32 x 164	81.3 x 50	N	223	144 2607
40 x 164	101.6 x 50	N	223	145 4073
42 x 164	106.7 x 50	F	223	114 9525
42 x 164	106.7 x 50	N	223	815 2951

Bulk Packs

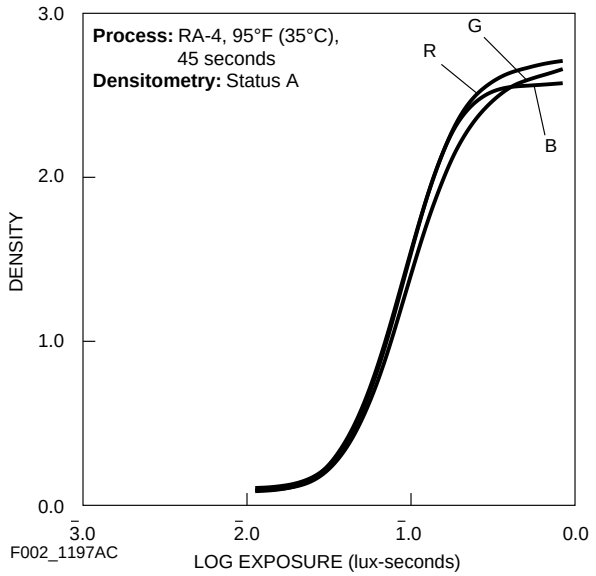
Rolls in. x ft.	Rolls cm x m	Surface	Spec No.	CAT No.
10 x 577	25.4 x 176	F	224	876 0605
11 x 577	27.9 x 176	E	224	803 1056

CURVES

Characteristic Curves: KODAK PROFESSIONAL PORTRA ENDURA Paper



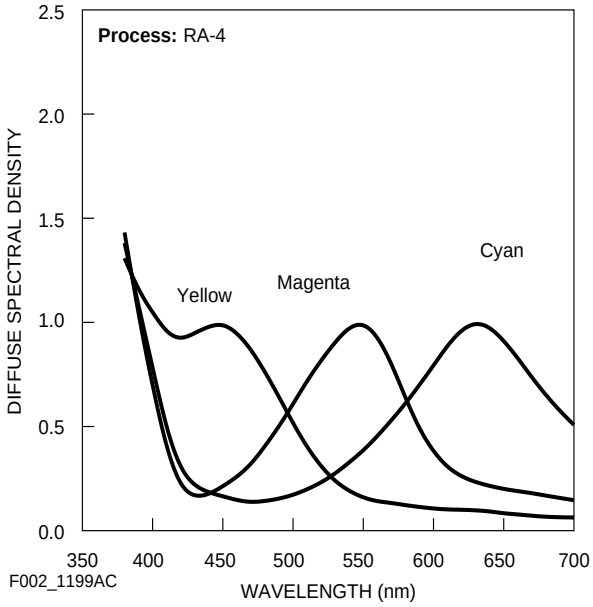
Characteristic Curves: KODAK PROFESSIONAL SUPRA ENDURA Paper



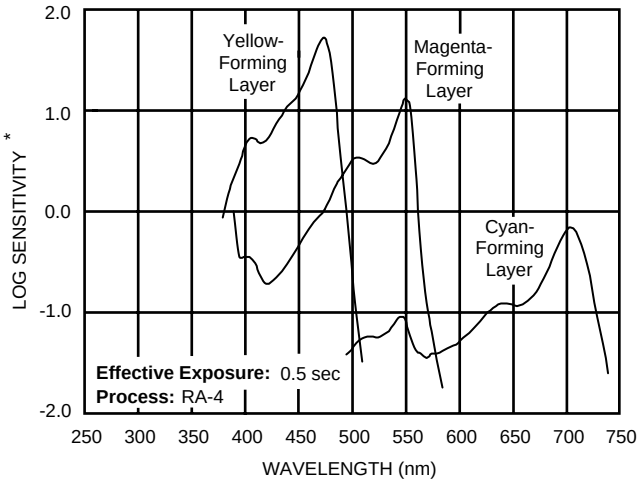
NOTICE: The sensitometric curves and data in this publication represent product tested under the conditions of exposure and processing specified. They are representative of production coatings, and therefore do not apply directly to a particular box or roll of photographic material. They do not represent standards or specifications that must be met by Eastman Kodak Company. The company reserves the right to change and improve product characteristics at any time.

KODAK PROFESSIONAL PORTRA ENDURA Paper and KODAK PROFESSIONAL SUPRA ENDURA Paper

Spectral-Dye-Density Curves



Spectral-Sensitivity Curves



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E-190	*KODAK PROFESSIONAL PORTRA Films*
E-71	*Retouching Color Negatives*
E-176	*Post-Processing Treatment of Color Prints—Effects on Image Stability*
J-39	*Tray, Drum, and Rotary-Tube Processing with KODAK EKTACOLOR RA Chemicals*
K-4	*How Safe is Your Safelight?*
Z-130	*Using KODAK EKTACOLOR RA Chemicals*

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